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December 11, 2006

Mr. Don Hwang
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: **Supplemental Source Area Investigation Work Plan**
Former Val Strough Chevrolet
327 34th Street, Oakland, California
Site ID #3035, RO #0000134

Dear Mr. Hwang:

LRM Consulting, Inc. (LRM) is pleased to present this *Supplemental Source Area Investigation Work Plan* (Work Plan) for the above-referenced site to the Alameda County Health Care Services Agency (ACHCSA). As discussed with you during a 19 October 2006 telephone conversation, the primary sources of petroleum hydrocarbons (i.e., gasoline underground storage tank [UST], former fuel dispenser, and former waste-oil UST) have been removed, and 1.5 years of dual-phase extraction (DPE) operations removed an estimated 9,000 pounds of hydrocarbons, reaching asymptotic levels for both the magnitude and rate of mass removal and yielding a dissolved plume which is stable and entirely contained within the site boundary. However, monitoring of groundwater quality during and between remedial events indicates that elevated levels of hydrocarbons occur locally in the immediate vicinity of well MW2 (near the former UST and fuel dispenser), especially in response to localized pumpage of well MW2. As such, it appears that residual hydrocarbons may be trapped in the vicinity of well MW2 and the operation of the DPE system resulted in migration from the residual source toward well MW2 (with limited mass removal efficiency).

This Work Plan is intended to investigate the magnitude and extent of this residual hydrocarbon source, replacing ETIC Engineering, Inc.'s (ETIC's) 3 March 2006 *Work Plan for Well Installation and Remediation Enhancements* (ETIC Work Plan), which was met with significant comments by ACHCSA[1]. The scope of work described herein focuses on determining the extent and magnitude of the suspected residual source in order to evaluate the need, if any, and/or approach to additional remedial activities at the site. In addition, shallow soil-vapor samples will be collected to evaluate potential human health risks via the inhalation pathway, which is considered the primary complete exposure pathway to residual hydrocarbons in groundwater at the site. The following presents the objectives of the planned source area investigation and a brief summary of the site background and the planned scope of work.

[1] ACHCSA, 2006. Fuel Leak Case No. RO0000134, Val Strough Chevrolet, 327 34th Street, Oakland, CA. July 19.

OBJECTIVES OF THE SUPPLEMENTAL SOURCE AREA INVESTIGATION

The objectives of the supplemental source area investigation are to:

1. Determine the extent and magnitude of the suspected residual source area through collection and analysis of soil and groundwater samples near the former gasoline UST and fuel dispenser;
2. Evaluate potential human health risks for onsite commercial receptors through collection and laboratory analysis of shallow soil-vapor samples near the former gasoline UST and fuel dispenser, and an assessment of potential health risks using the collected data in accordance with the San Francisco Regional Water Quality Control Board (RWQCB) guidelines (RWQCB, 2005[2]);
3. Evaluate the need, and if warranted, the approach to additional remediation of the residual source area.

SITE BACKGROUND

Site Description

Site Location: The former Val Strough Chevrolet site (the "site") is currently an active Honda automobile dealership and service center, located on the southwestern corner of the intersection of Broadway (Auto Row) and 34th Street (Figure 1). The site is located south of Interstate 580. Land use in the area is primarily commercial. The site is situated approximately 2 miles east of San Francisco Bay at approximately 61 feet above mean sea level (msl). The land surface in the vicinity slopes toward the south. The nearest surface water body is Lake Merritt, located approximately 1 mile south of the site (Figure 1).

Site Features: The site consists of a multi-level building and an adjacent parking lot (Figure 2). A box culvert for a former tributary of Glen Echo Creek is located approximately 17 feet below ground surface (bgs) in the eastern portion of the site.

Previous Work

Primary Sources: Two USTs (one gasoline and one waste-oil) were located beneath the sidewalk on the northern side of the property and a fuel dispenser was located inside the building (Figure 2). These primary sources were removed from the site in 1993.

Groundwater Monitoring: Groundwater beneath the site has been monitored since 1993. Currently, seven groundwater monitoring wells (MW1 through MW7) exist onsite.

[2] San Francisco Bay Regional Water Quality Control Board, 2005. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final. February.

Site Hydrogeology: In general, the site is underlain by silt and clay to depths ranging from approximately 15 to 20 feet bgs. Silty sand and fine-grained sand interbedded with thin clay intervals are encountered from approximately 20 feet bgs to the total explored depth of 35 feet bgs. The depth to groundwater beneath the site has ranged from approximately 12.5 to 23 feet bgs. As shown in the modified rose diagram on Figure 2, the direction of groundwater flow is generally toward the southwest to south-southeast, with an average hydraulic gradient of approximately 0.02 to 0.03 foot/foot.

Petroleum Hydrocarbon Distribution: The highest concentrations of petroleum hydrocarbons have been reported in groundwater samples collected from wells MW2 and MW3 (see Figure 2 and Table 1). Significantly lower concentrations of petroleum hydrocarbons have been reported in samples collected from well MW4 (25 feet to the southeast of well MW3). The extent of dissolved-phase petroleum hydrocarbons in groundwater is largely defined by relatively low and stable total petroleum hydrocarbon as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) concentrations detected in downgradient and cross-gradient monitoring wells MW1, MW5, MW6, and MW7 (see Table 1) and grab groundwater samples HP1 and HP3 (see Table 2). Boring HP2, which is located near the southern property boundary (see Figure 3), was dry. These data suggest that the petroleum hydrocarbon plume is stable and appears to be entirely contained within the property boundaries.

Importantly, hydrocarbon concentrations in well MW2, located in the immediate vicinity of the former gasoline UST and fuel dispenser, remained at relatively stable levels following termination of DPE activities (including cessation of groundwater extraction at well MW2) in June 2006, suggesting that the majority of source material has been successfully removed by DPE operations; this was further corroborated by the previously discussed magnitude and rate of DPE mass removal throughout the 1.5-year period of operation. However, TPH-g concentrations in this well after restart of extraction increased to 120,000 micrograms per liter, suggesting that a pocket of residual source materials remains trapped in saturated soils within the immediate vicinity of well MW2 (see Table 1). Monitoring data from well MW3, including increasing concentration trends since DPE termination, further suggest that this residual source may have contributed hydrocarbon mass to well MW3, perhaps in response to past remedial pumpage at this well. This residual source area is accordingly the subject of the proposed supplemental investigation documented herein.

DPE System Operation: Between February 2005 and June 2006, ETIC operated a DPE system onsite. Vacuum was applied to remove groundwater and soil vapor from up to two wells (MW3 and/or MW2). Because the mass removal rates achieved by the DPE system had reached asymptotic levels and elevated petroleum hydrocarbon concentrations in extraction well MW2 observed during DPE operation, the operation of the DPE system was ceased on 30 June 2006, and ETIC subsequently dismantled much of the remediation system and removed the skid-mounted DPE unit from the site.

PLANNED SCOPE OF WORK

Supplemental Source Area Investigation Activities

Rationale for Boring Locations: Boring locations were selected based on a review of available data for soil borings in the vicinity of the former gasoline UST and fuel dispenser and the previously discussed response to DPE at well MW2. As indicated on Figure 3, four soil borings are planned to the immediate north, west, and south of the former dispenser pump island (i.e, borings SB3, SB4, SB5 and SB6). Additional soil borings will be located north and southwest of well MW3 (i.e., borings SB7 and SB8). No soil boring is planned to the east of the former fuel dispenser because of non-detect petroleum hydrocarbon concentrations reported in soil samples collected from previously sampled soil boring SB2 (see Table 3).

As discussed in more detail below, soil samples will be collected at 5-foot intervals to a depth of approximately 30 feet bgs. This will allow for characterization of both unsaturated and saturated soils, where the residual hydrocarbons are likely trapped in the vicinity of well MW2. A grab groundwater sample will also be collected at a depth of 30 feet bgs. Importantly, the total boring depth (and deepest soil sample and grab groundwater sample) coincides with the depth at which hydrocarbons have been shown to decline in concentration in past sampling efforts at the site (see Table 3), reflecting the vertical extent of hydrocarbon impacts at the site. This sampling depth also coincides well with the screen interval of well MW2 (18-33 feet bgs), where the residual mass has occurred in response to pumpage.

As previously indicated, monitoring of groundwater quality at well MW3 indicates that some mass contribution from the residual source area toward well MW3 may have occurred, most likely enhanced by past pumpage at wells MW2 and MW3. Accordingly, a fifth boring is proposed for the area in between wells MW2 and MW3 (see Figure 3), with soil and groundwater sampling intervals corresponding to those discussed above.

To evaluate potential human health risks associated with the residual source area, shallow soil vapor samples (approximately 5 feet bgs) will be collected from a collocated boring adjacent to each soil boring (see Figure 3). These results are anticipated to provide an initial screening of the likely maximum concentrations of hydrocarbons in soil vapor above the trapped residual source area and may be used to evaluate the potential for vapor emissions toward the ground surface (and the onsite building). Included in this sampling effort will be collection of soil physical properties including soil porosity and moisture content, to be used in support of site-specific vapor emission calculations.

Prefield Activities: The anticipated boring locations are shown on Figure 3 and may be modified due to the presence of subsurface or overhead obstructions. These locations will be marked and Underground Service Alert will be contacted. A private utility locator will also be contracted to ensure that the proposed boring locations are clear of subsurface obstructions. In addition, drilling permits will be acquired from the Alameda County Department of Public Works. Encroachment permits will be acquired from the City of Oakland for borings located in the public right-of-way.

Prior to conducting the planned field activities, a comprehensive site health and safety plan will be prepared. The plan will be kept onsite during field activities and signed by each site worker.

Soil Borings: Six soil borings SB3 through SB8 will be drilled to approximately 30 feet bgs using a direct push rig (see Figure 3). Each soil boring will be continuously logged by a field geologist. The soil samples will be field screened for volatile organics using visual and olfactory observations and/or using a photoionization detector.

During drilling, one shallow soil vapor sample will be collected for laboratory chemical analyses at a depth of approximately 5 feet bgs from a collocated boring adjacent to each soil boring using a GeoProbe Post-Run Sampling System. Additionally, at a minimum of 5-foot intervals, soil samples will be collected for laboratory chemical analyses. Each soil boring will be advanced to a depth of approximately 30 feet bgs and one grab groundwater sample will be collected for laboratory chemical analyses from each soil boring using a Hydropunch or an open-hole piezometer. Standard procedures for drilling and sampling activities are presented in Appendix A.

Chemical Analyses: Selected soil vapor samples will be analyzed for petroleum hydrocarbon compounds, including oxygenates using United States Environmental Protection Agency (USEPA) Method Toxic Organics (TO)-15. Selected soil and groundwater samples will be analyzed for TPH-g, BTEX, and MTBE using USEPA Method 8260, TPH as diesel (TPH-d) and TPH as motor oil (TPH-mo) using modified USEPA Method 8015 with silica gel cleanup at a California-certified laboratory.

Soil and Water Handling: Soil and water produced during field activities will be temporarily stored onsite. Following review of analytical results, the soil and water will be transported to an appropriate facility for disposal/recycling.

Reporting

Upon completion of these activities and review of the analytical results, a *Supplemental Source Area Investigation Report* will be prepared that, at a minimum, will contain:

- Descriptions of the supplemental source area investigation field work;
- Boring logs;
- Tabulated soil and groundwater analytical results;
- Tabulated soil gas analytical results;
- Evaluation of potential human health risks for onsite commercial receptors using the collected soil vapor data and in accordance with applicable guidance document (RWQCB, 2005);
- Analytical reports and chain-of-custody forms; and
- Conclusions and recommendations.

SCHEDULE

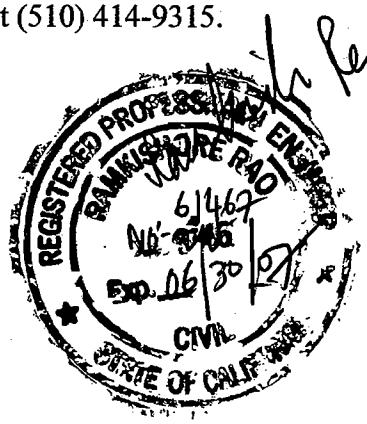
During review of this Work Plan, LRM plans to obtain necessary permits for the field work from Alameda County Department of Public Works and the City of Oakland. Upon approval of this Work Plan by the ACHCSA, the field activities will be scheduled. Approximately 4 weeks after completion of field activities, a *Supplemental Source Area Investigation Report* will be submitted.

CLOSING

We appreciate your assistance with this project. If you have any questions or require further information, please contact Ram Rao at (510) 414-9315.

Sincerely,
LRM CONSULTING, INC.

Ram Rao, P.E. (No. C 61467)
Senior Engineer



ATTACHMENTS

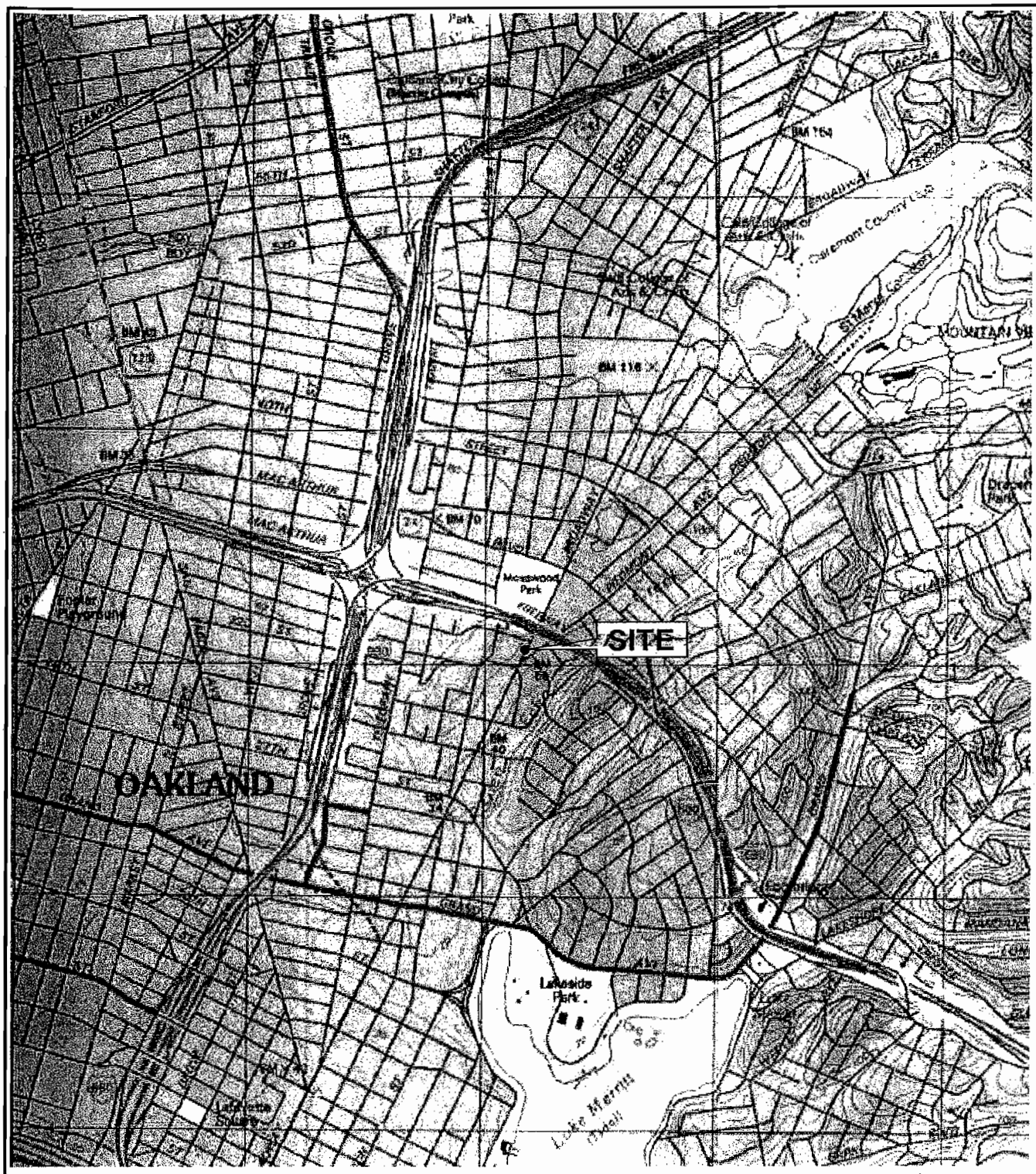
Figure 1 – Site Location Map
Figure 2 – Groundwater Contour Map and Rose Diagram
Figure 3 – Proposed Locations of Soil Borings

Table 1 – Cumulative Groundwater Elevation and Analytical Data
Table 2 – Grab Groundwater Analytical Data
Table 3 – Soil Analytical Data

Appendix A – Standard Protocols for Soil Vapor, Soil, and Grab Groundwater Sampling

cc: Jonathan Redding, Esq., Wendel, Rosen, Black & Dean, 1111 Broadway, 24th Floor, Oakland, California 94607
Greggory Brandt, Esq., Wendel, Rosen, Black & Dean, 1111 Broadway, 24th Floor, Oakland, California 94607
Don Strough, Strough Family Trust of 1983, 2 Sea View Avenue, Piedmont, California 94611

FIGURES



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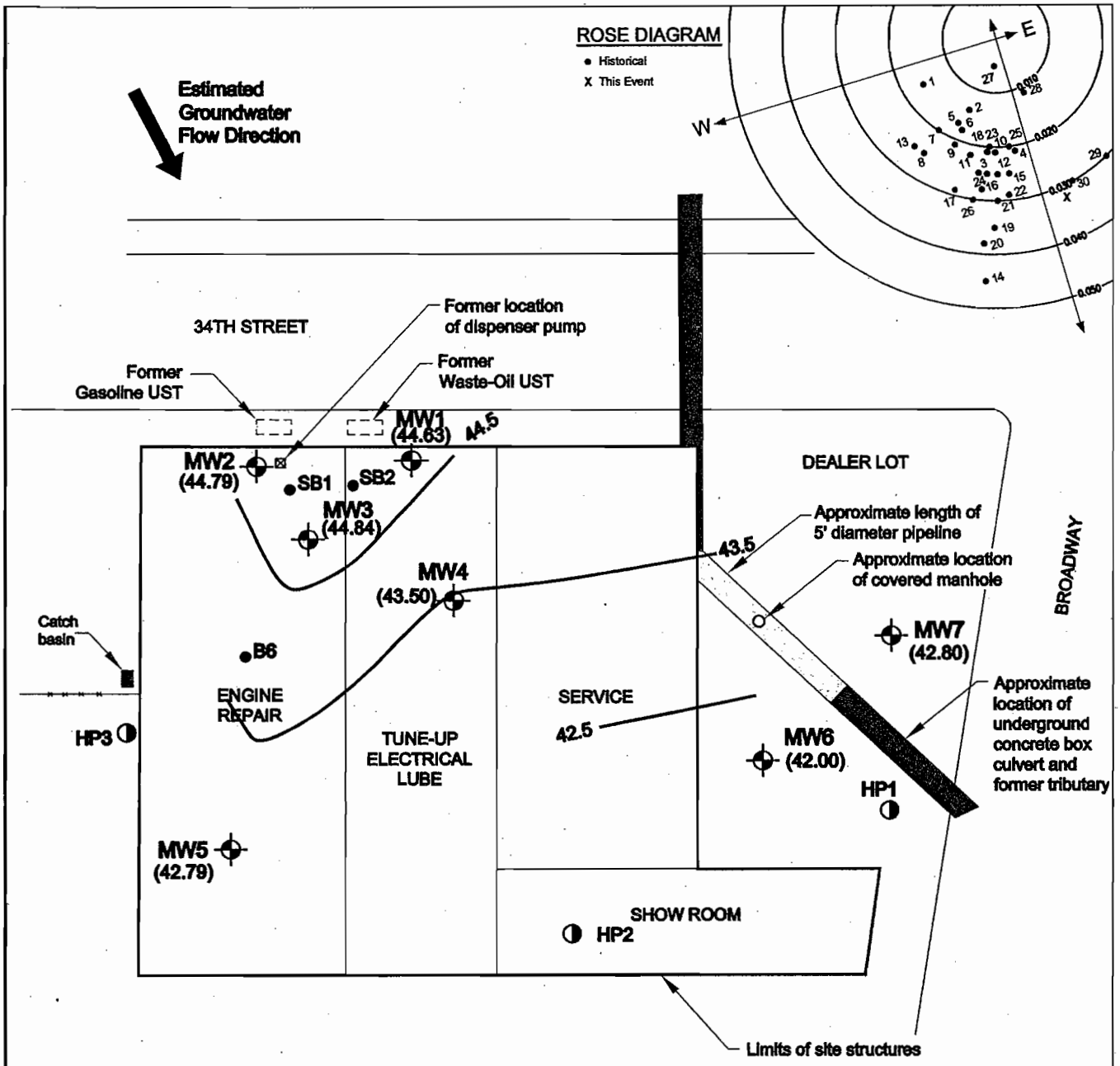
SITE LOCATION MAP
FORMER VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA

FIGURE: **1**



LEGEND:

- SB1 ● Soil boring
- HP2 ◑ Grab graoundwater sampling location
- MW2 ⊕ Groundwater monitoring well
- 42.79 Groundwater elevation (feet above mean sea level)
- 43.5 Groundwater elevation contour (feet above mean sea level)

Note: MW2 and MW-3 previously operated as dual phase extraction wells.

N

0 25 50

Scale (feet)

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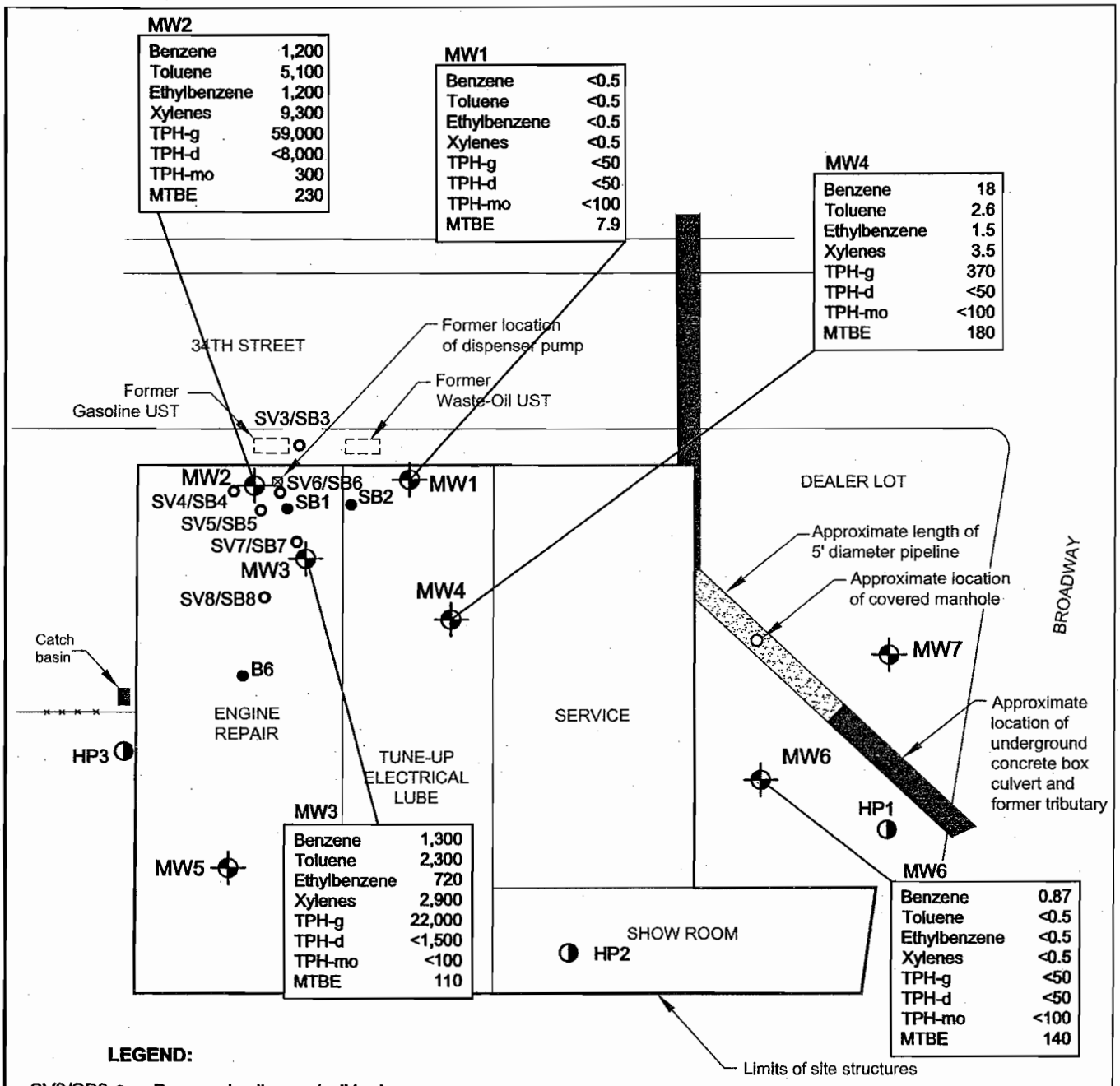
GROUNDWATER CONTOUR MAP AND ROSE DIAGRAM
FORMER VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA

FIGURE: **2**



LEGEND:

SV3/SB3 o	Proposed soil vapor/soil boring
HP2 ◑	Grab groundwater sampling location
SB-1 ●	Soil boring
MW5 ⊕	Groundwater monitoring well
TPH-g	Total Petroleum Hydrocarbons as gasoline
TPH-d	Total Petroleum Hydrocarbons as diesel
TPH-mo	Total Petroleum Hydrocarbons as motor oil
MTBE	Methyl Tertiary Butyl Ether

All concentrations are reported in micrograms per liter (ug/L) from 29 September 2006 Groundwater Monitoring Event.

N

0 25 50

Scale (feet)

LRM consulting inc.

PROPOSED LOCATIONS OF SOIL BORINGS
FORMER VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA

FIGURE: **3**

TABLES

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)								Concentration (mg/L)							
							Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	CO_2 (lab)	DO (field)	Eh (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW1	07/27/93	100.00	a	20.79	79.21	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	--	--	--	--	--	--	--	--	--	--	--	--
MW1	10/02/97	100.00	a	21.22	78.78	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<2.0	--	--	--	--	--	--	--	--	--	--
MW1	06/30/98	100.00	a	18.21	81.79	0.00	<0.50	<0.50	2.1	0.6	84	--	--	2.1	204	5	--	6.16	0.15	0.046	55	<0.10	<0.10	2
MW1	07/29/98	100.00	a	18.74	81.26	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	08/26/98	100.00	a	19.28	80.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	10/01/98	100.00	a	19.93	80.07	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	192	3.6	--	6.49	--	--	--	--	--	--
MW1	10/30/98	100.00	a	20.22	79.78	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	11/30/98	100.00	a	19.99	80.01	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/28/98	100.00	a	19.81	80.19	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	01/25/99	100.00	a	19.62	80.38	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	389	3.4	--	6.72	--	--	--	--	--	--
MW1	02/26/99	100.00	a	17.18	82.82	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/24/99	100.00	a	17.28	82.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	05/12/99	100.00	a	17.91	82.09	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/15/99	100.00	a	21.01	78.99	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<0.50	--	3.31	--	6.52	--	--	--	--	--	--
MW1	03/20/00	100.00	a	16.25	83.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	07/20/00	100.00	a	19.63	80.37	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	3.4	120	7.37	--	6.66	0.13	<0.01	54	<0.10	3.4	<0.2
MW1	10/11/00	100.00	a	20.80	79.20	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	04/10-11/01	100.00	a	18.81	81.19	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	1.2	117	NR	--	NR	<0.10	0.045	57	<0.10	6.6	0.15
MW1	07/10/01	100.00	a	20.51	79.49	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	11/20/01	64.69	b	21.36	43.33	0.00	<0.50	1.3	<0.50	0.81	<50	<50	<300	<2.0	--[c]	0.65	--	6.47	0.32	1.8	63	<0.10	--	<0.20
MW1	02/19/02	64.69	b	18.95	45.74	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	05/21/02	64.69	b	19.82	44.87	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<2.0	120	0.96	--	6.25	<0.10	0.5	58	<0.10	5.5	<0.20
MW1	06/27/03	64.69	b	19.93	44.76	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/29/03	64.69	b	21.24	43.45	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	--	--	--	--	--	--	--	--
MW1	12/12/03	64.69	b	21.27	43.42	0.00	<0.50	<0.50	<0.50	1.1	<50	58	<500	<0.50	--	--	--	--	--	--	--	--	--	--
MW1	03/15/04	64.69	b	18.18	46.51	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	0.14	--	--	--	--	--	--	--	--
MW1	06/24/04	64.69	b	20.48	44.21	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	0.15	--	--	--	--	--	--	--	--
MW1	09/29/04	64.69	b	21.37	43.32	0.00	<0.50	0.51	<0.50	<1.0	<50	<50	<500	<0.50	--	1.01	--	6.42	--	--	--	--	--	--
MW1	12/13/04	64.69	b	20.63	44.06	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/14/05	64.69	b	18.69	46.00	0.00	<0.50	<0.50	<0.50	<1.0	<50	73	h <500	<0.50	--	1.96	--	6.04	--	--	--	--	--	--
MW1	06/15/05	64.69	b	20.32	44.37	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/26/05	64.69	b	22.10	42.59	0.00	<0.50	<0.50	<0.50	<1.0	<50	i <50	<500	<0.50	--	1.84	317.4	6.43	--	--	--	--	--	--
MW1	12/12/05	64.69	b	22.39	42.30	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/29/06	64.69	b	15.24	49.45	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	74	--	1.57	--	6.73	--	--	--	--	--	--
MW1	06/19/06	64.69	b	18.27	46.42	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/29/06	64.69	b	20.06	44.63	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	7.9	--	0.43	--	6.40	--	--	--	--	--	--
MW2	07/27/93	101.27	a	22.10	79.17	0.00	10,000	27,000	2,900	20,000	120,000	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	10/02/97	101.27	a	22.91	78.36	0.43	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2	06/30/98	101.27	a	19.69	81.58	0.45	7,300	18,000	2,500	15,600	72,000	--	--	5,500	185	2.2	--	5.98	--	--	--	--	--	--
MW2	07/29/98	101.27	a	20.11	81.16	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	08/26/98	101.27	a	20.54	80.73	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	10/01/98	101.27	a	21.52	79.75	0.42	6,400	17,000	2,600	17,000	84,000	--	--	2,000	--	2.7	--	6.47	--	--	--	--	--	--
MW2	10/30/98	101.27	a	21.54	79.73	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	11/30/98	101.27	a	21.21	80.06	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/28/98	101.27	a	21.10	80.17	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)								Concentration (mg/L)								
							Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	CO_2 (lab)	DO (field)	Eh (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	N-NH_3	N-NO_3	o-PO_4
MW2	01/25/99	101.27	a	20.80	80.47	0.01	9,000	26,000	3,800	27,500	130,000	--	--	5,800	386	0.3	--	6.69	--	--	--	--	--	--
MW2	02/26/99	101.27	a	18.00	83.27	sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	03/24/99	101.27	a	18.27	83.00	trace	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	05/12/99	101.27	a	19.08	82.19	trace	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/15-16/99	101.27	a	22.42	78.85	0.025	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2	03/20/00	101.27	a	17.09	84.18	0.026	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	07/20/00	101.27	a	20.86	80.41	0.017	*	*	*	*	*	*	*	*	*	0.88	*	6.37	*	*	*	*	*	*
MW2	10/11/00	101.27	a	22.10	79.17	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	04/10-11/01	101.27	a	19.98	81.29	0.00	8,000	22,000	2,600	23,500	150,000	1,500	<600	3,600	168	NR	--	NR	3.1	2.5	16	0.14	0.19	<0.20
MW2	07/10/01	101.27	a	21.85	79.42	0.00	5,900	15,000	2,300	12,100	83,000	5,700	<1,500	2,800	--	--	--	--	--	--	--	--	--	--
MW2	11/20/01	65.95	b	22.75	43.20	0.00	--	--	--	--	--	--	--	--	120	NR	--	6.15	1.8	2	16	<0.10	--	<0.20
MW2	02/19/02	65.95	b	20.12	45.83	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	05/21/02	65.95	b	21.10	44.85	0.00	8,600	25,000	3,500	26,000	150,000	31,000	<3,000	4,800	160	0.88	--	5.99	3.9	1.7	13	<0.10	0.54	<0.20
MW2	06/27/03	65.95	b	21.48	44.47	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	09/29/03	65.95	b	23.04	42.91	0.48	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2[e]	12/12/03	65.95	b	22.75	43.31	0.16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2[e]	03/15/04	65.95	b	19.24	46.72	0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2[e]	06/24/04	65.95	b	22.10	44.06	0.31	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2[e]	09/29/04	65.95	b	22.81	43.14	sheen	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2[e]	12/13/04	65.95	b	22.06	43.95	0.08	3,700	12,000	1,900	10,000	47,000	2,600	<500	1,200	*	0.27	*	6.63	*	*	*	*	*	*
MW2[i]	03/14/05	65.95	b	25.00	40.95	0.00	780	3,700	920	6,400	43,000	43,000 h	<5,000	<200	*	*	*	*	*	*	*	*	*	*
MW2	06/15/05	65.95	b	21.14	44.81	0.00	2,900	15,000	2,400	22,000	120,000	13,000	<2,500	810	--	3.05	-147.6	--	--	--	--	--	--	--
MW2	07/18/05	65.95		NM	NC	NM	2,700	13,000	1,800	15,000	120,000	17,000	--	530	--	--	--	--	--	--	--	--	--	--
MW2	09/26/05	65.95		22.93	43.02	0.00	570	4,000	620	6,200	31,000	63,000	28,000 k	<50	--	--	--	--	--	--	--	--	--	--
MW2	12/12/05	65.95		25.40	40.55	0.00	670	5,300	1,100	9,800	34,000	2,800	<500	65	--	--	--	--	--	--	--	--	--	--
MW2	03/29/06	65.95		15.66	50.29	sheen	620	2,800	540	4,700	33,000	<4,000	<100	37	--	7.59	--	6.9	--	--	--	--	--	--
MW2	06/19/06	65.95		19.14	46.81	sheen	680	5,200	990	16,000	120,000	<30,000	1,900	170	--	1.78	--	6.21	--	--	--	--	--	--
MW2	09/29/06	65.95	b	21.16	44.79	0.00	1,200	5,100	1,200	9,300	59,000	<8000	300	230	--	1.71	--	6.66	--	--	--	--	--	--
MW3	07/27/93	101.29	a	22.28	79.01	0.02	9,100	24,000	5,300	33,000	330,000	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	10/02/97	101.29	a	22.71	78.58	0.03	4,200	11,000	1,800	10,600	36,000	--	--	3,500	--	--	--	--	--	--	--	--	--	--
MW3	06/30/98	101.29	a	19.47	81.82	0.00	4,800	11,000	1,200	7,100	51,000	--	--	3,900	300	2	--	6.03	1.4	9.8	13	1.4	<0.10	2.4
MW3	07/29/98	101.29	a	20.01	81.28	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	08/26/98	101.29	a	20.62	80.67	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	10/01/98	101.29	a	21.33	79.96	0.00	3,900	8,500	1,200	6,000	38,000	--	--	2,300	240	2	--	6.65	--	--	--	--	--	--
MW3	10/30/98	101.29	a	21.62	79.67	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	11/30/98	101.29	a	21.31	79.98	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/28/98	101.29	a	21.15	80.14	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	01/25/99	101.29	a	20.79	80.50	0.00	4,000	10,000	1200	6700	5,100	--	--	2900	238	1	--	7.01	--	--	--	--	--	--
MW3	02/26/99	101.29	a	18.02	83.27	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	03/24/99	101.29	a	18.37	82.92	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	05/12/99	101.29	a	19.22	82.07	0.0083	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/15-16/99	101.29	a	22.43	78.86	0.00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW3	03/20/00	101.29	a	17.14	84.15	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	07/20/00	101.29	a	20.98	80.31	0.00	5,700	14,000	1,600	9,300	69,000	2,900	<300	3,300	128	2.05	--	6.73	3.9	6.6	20	<0.10	0.55	<0.20
MW3	10/11/00	101.29	a	22.24	79.05	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)		GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)								Concentration (mg/L)								
								Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	CO_2 (lab)	DO (field)	Eh (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW3	04/10-11/01	101.29	a	20.70		80.59	0.00	7,200	<0.001	2,300	12,900	110,000	4,700	<1,500	4,300	137	NR	--	NR	1	6	8.2	<0.10	0.13	<0.20
MW3	07/10/01	101.29	a	21.97		79.32	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	11/20/01	65.99	b	22.80		43.19	0.00	6,300	16,000	2,400	14,900	100,000	5,900	<900	4,000	120	2.93	--	6.67	0.84	12	31	<0.10	--	<0.20
MW3	02/19/02	65.99	b	20.11		45.88	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	05/21/02	65.99	b	21.20		44.79	0.00	6,500	17,000	2,200	12,700	91,000	14,000	<3,000	2,200	130	1.01	--	6.62	4.2	9.6	25	<0.10	0.77	<0.20
MW3	06/27/03	65.99	b	21.32		44.67	sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	09/29/03	65.99	b	22.79		43.20	sheen	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW3[e]	12/12/03	65.99	b	22.73		43.27	0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW3[e]	03/15/04	65.99	b	19.32		46.67	sheen	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW3	06/24/04	65.99	b	21.99		44.00	0.00	3,400	7,700	1,000	4,800	39,000	1,700	<500	1,100	--	0.07	--	--	--	--	--	--	--	--
MW3	09/29/04	65.99	b	22.54		43.45	0.00	2,900	6,700	980	4,300	29,000	2,200	<500	1,100	--	0.80	--	6.42	--	--	--	--	--	--
MW3	12/13/04	65.99	b	22.06		43.93	0.00	1,700	2,900	790	3,400	17,000	1,300	<500	490	--	0.16	--	6.7	--	--	--	--	--	--
MW3[j]	03/14/05	65.99	b	24.00		41.99	0.00	680	1,700	380	1,600	10,000	670	h <500	67	--	--	--	--	--	--	--	--	--	--
MW3	06/15/05	65.99	b	21.13		44.86	0.00	260	960	330	1,400	12,000	1,200	<500	31	--	1.93	-150.4	--	--	--	--	--	--	--
MW3	07/18/05	65.99	b	NM		NC	NM	1,000	5,600	1,100	4,300	23,000	1,700	--	81	--	--	--	--	--	--	--	--	--	--
MW3	09/26/05	65.99	b	22.92		43.07	0.00	4,000	17,000	1,900	17,000	79,000	5,100	540	k 270	--	--	--	--	--	--	--	--	--	--
MW3	12/12/05	65.99	b	23.30		42.69	0.00	200	710	450	1,400	7,000	550	<500	<10	--	--	--	--	--	--	--	--	--	--
MW3	03/29/06	65.99	b	15.70		50.29	0.00	110	300	130	490	3,800	<200	<100	13	--	1.23	--	6.89	--	--	--	--	--	--
MW3	06/19/06	65.99	b	19.11		46.88	0.00	160	500	320	840	7,000	<300	<100	3.1	--	2.30	--	6.40	--	--	--	--	--	--
MW3	09/29/06	65.99	b	21.15		44.84	0.00	1,300	2,300	720	2,900	22,000	<1500	<100	110	--	1.05	--	6.78	--	--	--	--	--	--
MW4	06/30/98	98.65	a	16.93		81.72	0.00	2,200	930	850	2,100	10,000	--	--	1,800	222	2.6	--	6.18	0.14	4.3	14	0.8	0.8	1.5
MW4	07/29/98	98.65	a	17.48		81.17	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	08/26/98	98.65	a	18.65		80.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	10/01/98	98.65	a	18.74		79.91	0.00	570	46	130	36	1,100	--	--	1,300	320	3.4	--	<0.001	--	--	--	--	--	--
MW4	10/30/98	98.65	a	19.02		79.63	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	11/30/98	98.65	a	18.74		79.91	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/28/98	98.65	a	18.60		80.05	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	01/25-26/99	98.65	a	18.32		80.33	0.00	230	<8.3	<8.3	<8.3	290	--	--	1,300	475	6.7	--	7	--	--	--	--	--	--
MW4	02/26/99	98.65	a	15.81		82.84	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	03/24/99	98.65	a	16.01		82.64	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	05/12/99	98.65	a	17.71		80.94	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/15-16/99	98.65	a	19.83		78.82	0.00	5.8	<0.50	<0.50	<0.50	<50	--	--	1,400	--	1.75	--	7.02	--	--	--	--	--	--
MW4	03/20/00	98.65	a	14.9		83.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	07/20/00	98.65	a	18.38		80.27	0.00	91	4.6	19	12.9	210	<50	<300	1,500	126	3.88	--	6.67	9.5	5.3	11	<0.10	0.04	<0.20
MW4	10/11/00	98.65	a	19.61		79.04	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	04/10-11/01	98.65	a	17.55		81.10	0.00	110	<5.0	<5.0	<5.0	350	<50	<300	1,100	107	NR	--	NR	0.8	6.3	10	<0.10	<0.05	<0.20
MW4	07/10/01	98.65	a	19.34		79.31	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	11/20/01	63.35	b	20.16		43.19	0.00	<2.5	4	<2.5	3.7	96	<50	<300	2,500	130	0.83	--	6.51	1.6	10	11	<0.10	--	<0.20
MW4	02/19/02	63.35	b	17.34		46.01	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	05/21/02	63.35	b	18.57		44.78	0.00	340	5.7	70	<1.0	940	83	<300	1,600	150	1.65	--	6.32	3.1	8.4	9	<0.10	0.06	<0.20
MW4	06/27/03	63.35	b	18.72		44.63	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	09/29/03	63.35	b	20.11		43.24	0.00	<5.0	<5.0	<5.0	<10	1,100	<50	d <500	1,700	--	--	--	--	--	--	--	--	--	--
MW4	12/12/03	63.35	b	20.06		43.29	0.00	<13	<13	<13	<25	<1,300	<50	<500	1,000	--	--	--	--	--	--	--	--	--	--
MW4	03/15/04	63.35	b	16.89		46.46	0.00	1.5	<0.50	<0.50	<1.0	54	d <50	<500	41	--	0.16	--	--	--	--	--	--	--	--
MW4	06/24/04	63.35	b	19.31		44.04	0.00	69	<5.0	<5.0	<10	920	d <50	<500	1,100	--	0.15	--	--	--	--	--	--	--	--

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L) Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g		TPH-d		TPH-mo	MTBE	Concentration (mg/L) CO_2 (lab)	DO (field)	Eh (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW4	09/29/04	63.35	b	20.20	43.15	0.00	<5.0	<5.0	<5.0	<10	940	g	<50		<500	1,200	--	0.13	--	6.63	--	--	--	--	--	--
MW4	12/13/04	**	b	20.44	NC	0.00	<5.0	<5.0	<5.0	<10	740		<50		<500	860	--	0.58	--	6.84	--	--	--	--	--	--
MW4	03/14/05	**	b	18.30	NC	0.00	20	<5.0	<5.0	<10	930	i	<50		<500	930	--	0.28	--	6.34	--	--	--	--	--	--
MW4	06/15/05	**	b	20.03	NC	0.00	350	6.1	<5.0	<10	2100		89		<500	1,100	--	0.46	-98.9	--	--	--	--	--	--	--
MW4	07/18/05	**		NM	NC	NM	11	<5.0	<5.0	<10	540	i	<50		--	1,100	--	--	--	--	--	--	--	--	--	--
MW4	09/26/05	**		21.79	NC	0.00	<5.0	<5.0	<5.0	<10	960	i	<50		<500	660	--	2.20	210.4	6.73	--	--	--	--	--	--
MW4	12/12/05	**		21.89	NC	0.00	<5.0	<5.0	<5.0	<10	820		<50		<500	1,000	--	2.05	--	6.62	--	--	--	--	--	--
MW4	03/29/06	**		14.85	NC	0.00	49	160	120	300	2,400		<100		<100	130	--	1.07	--	6.82	--	--	--	--	--	--
MW4	06/19/06	**		17.96	NC	0.00	100	940	540	1,800	8,800		<400		<100	55	--	2.49	--	5.76	--	--	--	--	--	--
MW4	09/29/06	63.35	b	19.85	43.50	0.00	18	2.6	1.5	3.5	370		<50		<100	180	--	0.25	--	6.66	--	--	--	--	--	--
MW5	06/30/98	100.9	a	20.60	80.30	0.00	<0.50	<0.50	<0.50	<0.50	<50		--		--	23	220	4.3	--	6.1	--	--	--	--	--	--
MW5	07/29/98	100.9	a	21.52	79.38	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	08/26/98	100.9	a	22.21	78.69	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	10/01/98	100.9	a	22.95	77.95	0.00	<1.0	<1.0	<1.0	<1.0	<50		--		--	<2.0	256	4.8	--	6.71	--	--	--	--	--	--
MW5	10/30/98	100.9	a	23.23	77.67	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	11/30/98	100.9	a	23.12	77.78	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/28/98	100.9	a	23.18	77.72	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	01/25-26/99	100.9	a	22.61	78.29	0.00	<1.0	<1.0	<1.0	<1.0	<50		--		--	<2.0	305	9.7	--	7.04	--	--	--	--	--	--
MW5	02/26/99	100.9	a	19.78	81.12	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/24/99	100.9	a	20.25	80.65	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	05/12/99	100.9	a	21.06	79.84	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/15-16/99	100.9	a	24.19	76.71	0.00	<0.50	<0.50	<0.50	<0.50	<50		--		--	<0.50	--	2.72	--	7.19	--	--	--	--	--	--
MW5	03/20/00	100.9	a	19.15	81.75	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	07/20/00	100.9	a	21.84	79.06	0.00	<0.50	0.98	<0.50	<0.50	<50		<50		<300	1.9	134	5.58	--	6.35	0.11	0.017	49	<0.10	3.9	<0.20
MW5	10/11/00	100.9	a	23.4	77.50	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	04/10-11/01	100.9	a	22.3	78.60	0.00	<0.50	2.6	<0.50	0.6	<50		<50		<300	1.5	183	66	--	NR	<0.10	0.042	45	<0.10	2.9	0.11
MW5	07/10/01	100.9	a	23.64	77.26	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	11/20/01	65.59	b	24.65	40.94	0.00	0.83	12	1.2	11	140		860		2,500	10	--[e]	66	--	6.01	0.2	2.5	42	<0.10	--	<0.20
MW5	02/19/02	65.59	b	22.37	43.22	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	05/21/02	65.59	b	23.10	42.49	0.00	<0.50	<0.50	<0.50	<0.50	<50		2,200		<300	<2.0	140	66	--	6.3	<0.1	0.22	44	<0.10	3	<0.20
MW5	06/27/03	65.59	b	23.07	42.52	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/29/03	65.59	b	24.38	41.21	0.00	<0.50	0.52	7.1	35	100		<50	d	<500	1.4	--	--	--	--	--	--	--	--	--	--
MW5	12/12/03	65.59	b	23.90	41.69	0.00	<0.50	<0.50	<0.50	<1	<50		<50		<500	1.5	--	--	--	--	--	--	--	--	--	--
MW5	03/15/04	65.59	b	20.82	44.77	0.00	<0.50	<0.50	<0.50	<1.0	<50		<50		<500	<0.50	--	6.4	--	--	--	--	--	--	--	--
MW5	06/24/04	65.59	b	23.57	42.02	0.00	<0.50	<0.50	<0.50	<1.0	<50		130	f	<500	0.79	--	5.56	--	--	--	--	--	--	--	--
MW5	09/29/04	65.59	b	24.44	41.15	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/13/04	65.59	b	23.87	41.72	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/14/05	65.59	b	20.18	45.41	0.00	<0.50	1.3	1.5	8.6	82		<50		<500	<0.50	--	3.91	--	5.57	--	--	--	--	--	--
MW5	06/15/05	65.59	b	12.96	52.63	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/26/05	65.59	b	23.60	41.99	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/12/05	65.59	b	23.84	41.75	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/29/06	65.59	b	17.19	48.40	0.00	<0.50	<0.50	<0.50	<0.50	73		<50		<100	<0.50	--	2.3	--	6.3	--	--	--	--	--	--
MW5	06/19/06	65.59	b	20.22	45.37	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW-5	09/29/06	65.59	b	22.80	42.79	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L) Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g		TPH-d		TPH-mo	MTBE	Concentration (mg/L) CO_2 (lab)	DO (field)	Eh (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW6	07/20/00	96.60	a	18.30	78.30	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<300	160	122	2.72	--	6.66	120	1.9	53	6	0.05	<0.20
MW6	10/11/00	96.60	a	18.69	77.91	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW6	04/10-11/01	96.60	a	17.85	78.75	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<300	180	142	NR	--	NR	22	2.2	0.69	5.2	<0.05	<0.20
MW6	07/10/01	96.60	a	18.43	78.17	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW6	11/20/01	59.60	b	18.67	40.93	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<300	450	100	2.03	--	6.44	29	5.2	1.1	3.4	--	<0.20
MW6	02/19/02	59.60	b	17.40	42.20	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW6	05/21/02	59.60	b	17.68	41.92	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<300	170	100	0.76	--	6.6	11	3.4	1.4	8.9	0.65	<0.20
MW6	06/27/03	59.60	b	17.73	41.87	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/29/03	59.60	b	18.48	41.12	0.00	<1.0	<1.0	<1.0	<2.0	230	d	<50		<500	340	--	--	--	--	--	--	--	--	--	--
MW6	12/12/03	59.60	b	17.89	41.71	0.00	<2.5	<2.5	<2.5	<5.0	<250		51		<500	190	--	--	--	--	--	--	--	--	--	--
MW6	03/15/04	59.60	b	16.46	43.14	0.00	<1.0	<1.0	<1.0	<2.0	200		<50		<500	220	--	0.11	--	--	--	--	--	--	--	--
MW6	06/24/04	59.60	b	17.97	41.63	0.00	<1.0	<1.0	<1.0	<2.0	130		<50		<500	190	--	0.05	--	--	--	--	--	--	--	--
MW6	09/29/04	59.60	b	18.55	41.05	0.00	<0.50	0.61	<0.50	1.2	210	g	<50		<500	190	--	0.37	--	6.60	--	--	--	--	--	--
MW6	12/13/04	59.60	b	17.88	41.72	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW6	03/14/05	59.60	b	16.82	42.78	0.00	<0.50	<0.50	<0.50	1.8	160		<50		<500	190	--	0.08	--	5.65	--	--	--	--	--	--
MW6	06/15/05	59.60	b	17.60	42.00	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/26/05	59.60	b	NM	NM	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW6	12/12/05	59.60	b	18.33	41.27	0.00	0.62	<0.50	<0.50	1.0	81		<50		<500	140	--	1.52	--	6.61	--	--	--	--	--	--
MW6	03/29/06	59.60	b	14.53	45.07	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<100	120	--	6.93	--	6.06	--	--	--	--	--	--
MW6	06/19/06	59.60	b	16.46	43.14	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/29/06	59.60	b	17.60	42.00	0.00	0.87	<0.50	<0.50	<0.50	<50		<50		<100	140	--	0.16	--	6.49	--	--	--	--	--	--
MW7	07/20/00	96.75	a	15.93	80.82	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<300	<0.50	32.2	7.15	--	7.43	<0.1	0.002	7.5	<0.10	2.6	0.13
MW7	10/11/00	96.75	a	16.90	79.85	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	04/10-11/01	96.75	a	15.80	80.95	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<300	<0.50	77.6	NR	--	NR	0.18	0.048	49	<0.10	2.7	0.31
MW7	07/10/01	96.75	a	16.71	80.04	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	11/20/01	59.47	b	16.17	43.30	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<300	<2.0	62	0.96	--	7.11	0.16	1.8	63	<0.10	--	<0.20
MW7	02/19/02	59.47	b	14.92	44.55	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	05/21/02	59.47	b	15.18	44.29	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<300	<0.50	68	1.03	--	7.57	0.11	0.35	51	<0.10	2.8	0.11
MW7	06/27/03	59.47	b	16.28	43.19	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	
MW7	09/29/03	59.47	b	16.88	42.59	0.00	<0.50	<0.50	<0.50	<1.0	<50		<50		<500	0.62	--	--	--	--	--	--	--	--	--	--
MW7	12/12/03	59.47	b	14.95	44.52	0.00	<0.50	<0.50	<0.50	<1.0	<50		<50		<500	<0.50	--	--	--	--	--	--	--	--	--	--
MW7	03/15/04	59.47	b	14.77	44.70	0.00	<0.50	<0.50	<0.50	<1.0	<50		<50		<500	<0.50	--	0.54	--	--	--	--	--	--	--	--
MW7	06/24/04	59.47	b	16.33	43.14	0.00	<0.50	<0.50	<0.50	<1.0	<50		300	f	<500	<0.50	--	0.20	--	--	--	--	--	--	--	--
MW7	09/29/04	59.47	b	16.88	42.59	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/13/04	59.47	b	15.26	44.21	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/14/05	59.47	b	15.00	44.47	0.00	<0.50	<0.50	<0.50	<1.0	<50		<50		<500	<0.50	--	0.47	--	6.15	--	--	--	--	--	--
MW7	06/15/05	59.47	b	15.32	44.15	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/26/05	59.47	b	NM	NM	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/12/05	59.47	b	15.99	43.48	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/29/06	59.47	b	12.65	46.82	0.00	<0.50	<0.50	<0.50	<0.50	<50		<50		<100	<0.50	--	8.72	--	5.81	--	--	--	--	--	--
MW7	06/19/06	59.47	b	14.49	44.98	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/29/06	59.47	b	16.67	42.80	0.00	--	--	--	--	--		--		--	--	--	--	--	--	--	--	--	--	--	--

SPH Separate-phase hydrocarbons.

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

						Concentration (µg/L)								Concentration (mg/L)									
Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	CO_2 (lab)	DO (field)	Eh (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$

CO_2 Carbon dioxide.
DO Dissolved oxygen.
Fe(II) Ferrous iron.
Mn Manganese.
SO_4 Sulfate.
$N\text{-}NH_3$ Ammonia.
$N\text{-}NO_3$ Nitrate.
$o\text{-}PO_4$ Ortho-Phosphate.
GW Groundwater.
TPH-g Total Petroleum Hydrocarbons as gasoline.
TPH-d Total Petroleum Hydrocarbons as diesel.
TPH-mo Total Petroleum Hydrocarbons as motor oil.
MTBE Methyl tertiary butyl ether.
NC Not calculated.
NM Not measured.
NR Not reported.
µg/L Micrograms per liter.
mg/L Milligrams per liter.
* SPH present; not sampled.
** Well MW4 elevation modified due to site renovation activities. Not Surveyed.
-- Not analyzed or not sampled.
< Less than the laboratory reporting limits.
a Elevations are referenced to monitoring well MW1, with assumed datum of 100.00 feet.
b Elevations based on a survey conducted August 2002 and referenced benchmark with known elevation (NGVD 29) of 60.40 feet above mean sea level.
c Analysis not conducted due to broken sample containers.
d Hydrocarbon reported in the gasoline range does not match laboratory gasoline standard.
e Groundwater elevation in wells with SPH are corrected by multiplying the specific gravity of gasoline (0.69) by the SPH thickness and adding this value to the water elevation.
f Hydrocarbon reported is in the early diesel range, and does not match the laboratory diesel standard.
g Sample contained discrete peak in gasoline range and identified by lab as MTBE.
h Quantity of unknown hydrocarbon(s) in sample based on diesel.
i The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern.
j Depth to groundwater is based on the depth of the stingers.
k Quantity of unknown hydrocarbon(s) in sample based on mtor oil.

TABLE 2 GRAB GROUNDWATER ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Boring ID	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g		TPH-d	TPH-mo	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB
HP1	12/18/2003	26-30	<0.50	<0.50	<0.50	**11**	**410**	dp	**180**	<500	<50	**480**	<10	<0.50	<0.50	<0.50	<0.50
HP3	12/18/2003	32-36	<0.50	<0.50	<0.50	<1.0	<50		**75**	<500	<5.0	**0.55**	<1.0	<0.50	<0.50	**1.3**	<0.50

Concentrations reported in micrograms per liter

TPH-g	Total Petroleum Hydrocarbons as gasoline.
TPH-d	Total Petroleum Hydrocarbons as diesel.
TPH-mo	Total Petroleum Hydrocarbons as motor oil.
TBA	t-butyl alcohol
MTBE	Methyl tertiary butyl ether.
DIPE	di-isopropyl ether
ETBE	ethyl t-butyl ether
TAME	t-amyl methyl ether
1,2-DCA	1,2-dichloroethane
EDB	ethylene dibromide
<	less than the laboratory reporting limits
dp	Sample contains discrete peak in addition to gasoline

TABLE 3 SOIL ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB
SB1	12/18/2003	9.5-10	<0.005	<0.005	<0.005	<0.005	<1	<1	<50	<0.010	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005
SB1	12/18/2003	14.5-15	**0.1**	**0.23**	**0.03**	**0.34**	**15**	**1.6**	<50	**0.096**	**0.22**	<0.010	<0.005	<0.005	<0.005	<0.005
SB1	12/18/2003	25-25.5	**9.7**	**130**	**52**	**360**	**1100**	**95**	<50	<25	**6.3**	<10	<5	<5	<5	<5
SB1	12/18/2003	34.5-35	<0.005	**0.01**	**0.0056**	**0.03**	<1	<1	<50	<0.010	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005
SB2	12/18/2003	9.5-10	<0.005	<0.005	<0.005	<0.005	<1	**3.1**	<50	<0.010	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005
SB2	12/18/2003	14.5-15	<0.005	<0.005	<0.005	<0.005	<1	**1.8**	<50	<0.010	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005
SB2	12/18/2003	24.5-25	**0.0051**	<0.005	**0.019**	**0.021**	<1	**1.2**	<50	**0.011**	**0.02**	<0.010	<0.005	<0.005	<0.005	<0.005
SB2	12/18/2003	34.5-35	<0.005	<0.005	<0.005	<0.005	<1	**3.2**	<50	<0.010	<0.005	<0.010	<0.005	<0.005	<0.005	<0.005
MW1	7/19/1993	4.5-6	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--
MW1	7/19/1993	9.5-11	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--
MW1	7/19/1993	14.5-16	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--
MW1	7/19/1993	19.5-21	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--
MW1	7/19/1993	24.5-26	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--
MW2	7/19/1993	4.5-6	**7.2**	**71**	**31**	**260**	**2,000**	--	--	--	--	--	--	--	--	--
MW2	7/19/1993	9.5-11	**5.7**	**54**	**24**	**210**	**1,700**	--	--	--	--	--	--	--	--	--
MW2	7/19/1993	14.5-16	**1.8**	**14**	**5.1**	**51**	**410**	--	--	--	--	--	--	--	--	--
MW2	7/19/1993	19.5-21	**100**	**780**	**260**	**1,700**	**10,000**	--	--	--	--	--	--	--	--	--
MW2	7/19/1993	24.5-26	**1.9**	**5.2**	**0.56**	**3.4**	**19**	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	4.5-6	ND	0.009	<0.005	**0.014**	<1	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	9.5-11	<0.005	<0.005	<0.005	0.009	<1	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	14.5-16	**0.079**	**0.009**	**0.01**	**0.023**	<1	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	19.5-21	**6.4**	**46**	**14**	**150**	**1,400**	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	24.5-26	**1.4**	**2.6**	**0.38**	**2**	**19**	--	--	--	--	--	--	--	--	--
MW4	6/26/1998	5-5.5	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--
MW4	6/26/1998	20-20.5	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--
MW4	6/26/1998	25-25.5	**0.045**	**0.015**	**0.012**	**0.03**	<1	--	--	--	**62**	--	--	--	--	--
MW5	6/26/1998	14.5-15	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--

TABLE 3 SOIL ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB
MW5	6/26/1998	20-20.5	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--
B-6	6/26/1998	15.5-16	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--
B-6	6/26/1998	21-21.5	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--
Tank Removal Sampling Data																
TA001	3/4/1993	11	<0.010	**0.11**	**0.48**	**0.28**	**5.0**	--	--	--	--	--	--	--	--	--
TA002	3/4/1993	11	<0.080	**0.2**	**4.9**	**7.8**	**130**	--	--	--	--	--	--	--	--	--
TA003	3/5/1993	9	<0.005	<0.005	**0.014**	**0.018**	<1	**96**	--	--	--	--	--	--	--	--
TA004	3/5/1993	9	<0.005	<0.005	<0.005	<0.005	<1	**7.0**	--	--	--	--	--	--	--	--

Concentrations reported in milligrams per kilograms

TPH-g	Total Petroleum Hydrocarbons as gasoline.	TBA	t-butyl alcohol
TPH-d	Total Petroleum Hydrocarbons as diesel.	DIPE	di-isopropyl ether
TPH-mo	Total Petroleum Hydrocarbons as motor oil.	ETBE	ethyl t-butyl ether
MTBE	Methyl tertiary butyl ether.	TAME	t-amyl methyl ether
--	Not analyzed.	1,2-DCA	1,2-dicholorehtnane
		EDB	ethylene dibromide

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APPENDIX A

Standard Protocols for Soil Vapor, Soil, and Grab Groundwater Sampling

STANDARD PROTOCOLS FOR SOIL VAPOR, SOIL, AND GRAB GROUNDWATER SAMPLING

SUBSURFACE CLEARANCE PROCEDURES

Prior to drilling, proposed boring locations are marked with white paint. Underground Service Alert (USA) is contacted no more than two weeks prior to drilling activities and a "ticket" is issued for the particular investigation. USA members mark underground utilities in the delineated areas using standard color code identifiers.

The proposed boring locations are also investigated by a geophysical surveying contractor using electromagnetic induction and magnetic surveys, among other methods. The choice of methods depends on shallow soil types and potential interference from surrounding cultural features.

The borings are cleared by hand auger, shovel, or posthole digger to the full diameter of downhole equipment to at least 4 feet below ground surface. An air knife may also be used in conjunction with the above hand clearing tools.

Downhole equipment, including drive casing, sample barrels, surge blocks and tools, are detergent-washed using Alconox or equivalent, or steam-cleaned prior to and following drilling activities at each boring.

SOIL VAPOR SAMPLING PROCEDURES

Probe Installation: Geoprobe direct-push rigs, or equivalent, are used to collect soil-vapor samples. The drive rods are advanced to a predetermined depth, typically 3 to 5 feet below ground surface (bgs), and then pulled back to expose the inlets of the soil-vapor probe. To prevent ambient air intrusion from occurring, hydrated bentonite is typically used to seal around the drive rod at the ground surface, and a sampling tube is attached to the probe tip, typically using the post-run tubing system.

Sample Collection: To allow for subsurface conditions to equilibrate, soil-vapor sampling is conducted at least 20 minutes after probe installation. To remove stagnant and ambient air from the sampling system, 3 purge volumes (i.e., internal tubing volume and annular space around probe tip) are extracted using a vacuum pump prior to sampling. Purging and sampling rates of 100-200 milliliters/minute are used to limit stripping and prevent ambient air from diluting the samples. Following purging, samples are collected in summa canisters equipped with vacuum gauge and flow regulatory. Sample collection using syringes and/or Tedlar bags may also be conducted. Samples are collected under chain-of-custody procedures.

SOIL SAMPLING PROCEDURES

Borings are typically advanced using hollow-stem continuous-flight augers or direct-push technologies, such as cone penetration test or Geoprobe rigs. During hollow-stem auger drilling, soil samples are typically collected using a 18-inch long modified California split-spoon sampler or 5-foot long continuous core barrel. At each sample depth, the split-spoon sampler, containing three 6-inch long brass or stainless steel liners, is driven 18 inches ahead of the augers into undisturbed soil. The core barrel advances with the augers during drilling. Alternatively, some drill rigs are capable of collecting soil samples using a direct-push 4-foot long macrocore sampler.

SOIL SAMPLE HANDLING

Soil samples are described by a trained geologist or engineer using the Unified Soil Classification System. The soil properties that are typically noted on boring logs include grain size category, color, density/firmness, plasticity and moisture content.

Selected samples are sealed with Teflon tape and plastic endcaps, and labeled with the boring number, sample depth, site location, date, and time. The samples are placed in bags and stored in an ice-filled cooler. Standard chain-of-custody procedures are followed.

Selected soil is also placed in a sealed plastic bag to allow volatile organic compounds (VOCs) to volatilize. A photoionization detector or other organic vapor analyzer is used to measure total VOC concentrations. This field screening, along with other observations, are used to select soil samples for analysis.

Soil cuttings are either drummed or stockpile on and covered with plastic sheeting. Typically, the soils are profiled and transported to an approved landfill for disposal.

GRAB GROUNDWATER SAMPLING

Grab groundwater samples are typically collected using a Hydropunch or an open-hole piezometer. The Hydropunch sampler consists of an expendable drive point, a drive head, a protective sheath, a 3 or 4-foot long inner stainless steel screen (or polyvinyl chloride [PVC]) and an O-ring seal. Once the desired depth is achieved, the rods will be retracted to expose the Hydropunch screen to groundwater. Grab sampling with the open-hole piezometer consists of installing a small-diameter PVC well casing with 5 feet of 0.010-inch slotted well screen in the open boring. This method is typically used for shallow grab water samples. Groundwater samples may then be collected with a bailer, peristaltic pump, bladder pump or inertial pump.

WATER SAMPLE HANDLING

The samples are decanted into containers with appropriate preservatives. Samples that will be analyzed for VOCs are collected in 40-milliliter glass volatile organic analysis (VOA) vials with Teflon-lined septum caps. VOA vials are filled so that there are no air bubbles. The sample

containers are labeled with the well number, date, location, sampler's initials, and preservative used. The sample containers are placed in a cooler with ice for delivery to the laboratory. Standard chain-of-custody procedures are followed.